Viejas Hotel Project TEIR

Appendix D2

Supplemental Noise Evaluation

Prepared Ldn Consulting, Inc.

February 20, 2012

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
phone 760-473-1253 fax 760-689-4943 www.ldnconsulting.net

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Mr. Ralph Kingery
BRG Consulting, Inc.
304 Ivy Street
San Diego, CA 92101

SUBJECT: Supplemental noise evaluation for the Viejas Hotel Tribe Environmental Impact Report (TEIR) – San Diego CA

This noise report provides a supplemental analysis of construction noise and potential offsite roadway noise impacts associated with the Viejas Hotel TEIR. This report supplements the December 2, 2011 noise report completed by Investigative Science & Engineering, Inc. (ISE) for the project. The ISE noise analysis completed in the December 2011 remains valid for the ambient conditions and for operational noise activities associated with the project. This report provides additional analysis of construction noise and potential noise impacts from Project related offsite roadway noise associated with the project.

Project Location and Description

The proposed Viejas Hotel site consists of approximately 2.5 acres, located at 5000 Willows Road, within the Viejas Indian Reservation in the eastern portion of San Diego County. The Project consists of an approximate 156-room (150 guest rooms plus approximately six facilities use spaces) within a five-story hotel, to be built adjacent to and connecting to the existing Viejas Casino.

Additionally, the Project proposes 7,200 sq ft of additional seating for the existing buffet restaurant, along with a connection between the hotel and casino, will also be provided. The project site configuration is provided in Figure 1.

Mr. Ralph Kingery
BRG Consulting, Inc.
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San Diego, CA 92101

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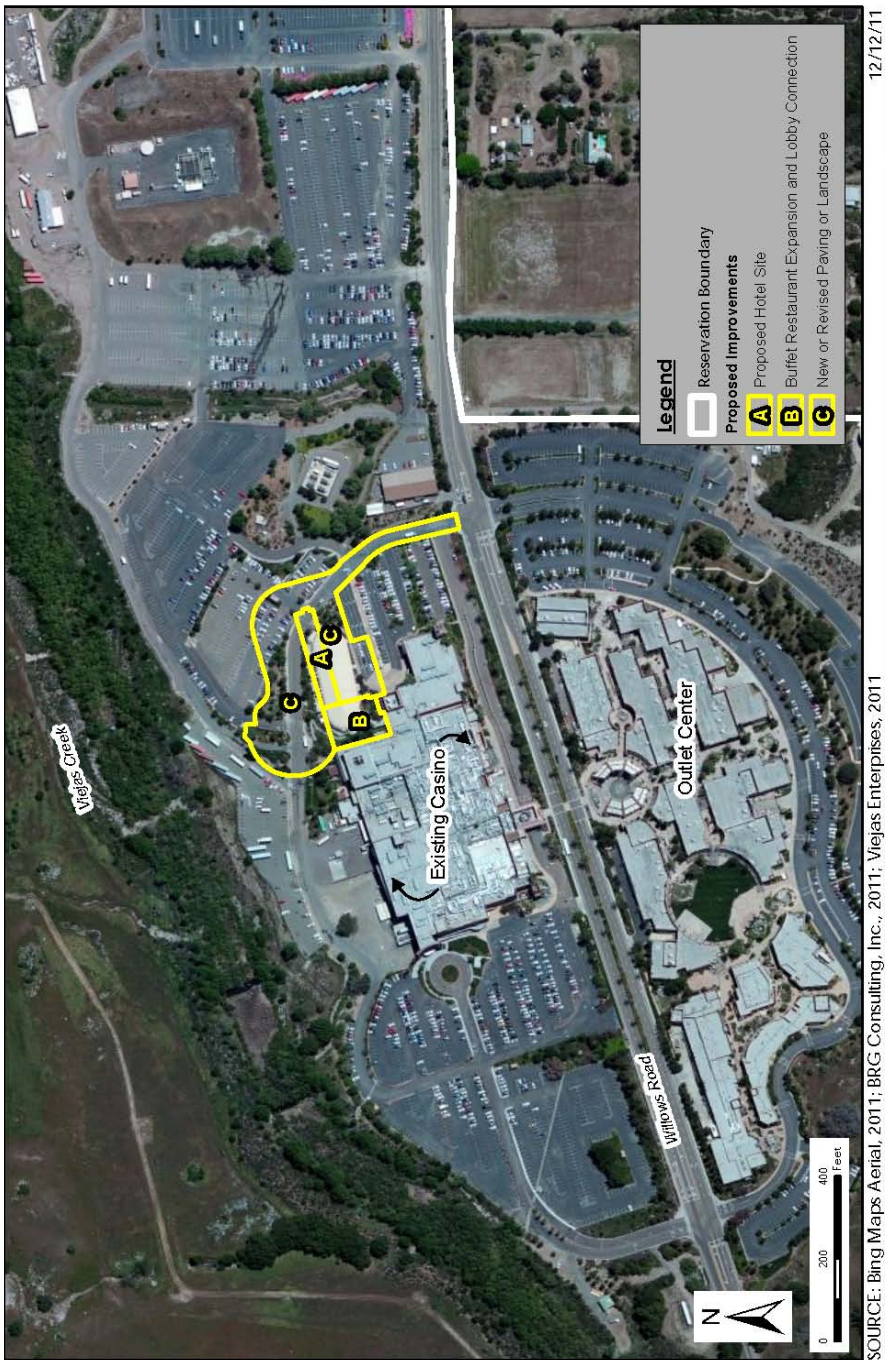
Figure 1: Project Site Configuration



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Construction Analysis Procedures and Findings

Construction Noise: Noise generated by construction activities related to the project has been compared to the standards listed in San Diego County Code Sections as follows.

SEC. 36.408: HOURS OF OPERATION OF CONSTRUCTION EQUIPMENT

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

a. Between 7 p.m. and 7 a.m.

b. On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, December 25th and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in sections 36.409 and 36.410.

SEC. 36.409: SOUND LEVEL LIMITATIONS ON CONSTRUCTION EQUIPMENT

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Using a point-source noise prediction model, calculations of the expected construction noise impacts were completed. The essential model input data for these performance equations include the source levels of each type of equipment, relative source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day (also referred to as the duty-cycle) and any transmission loss from topography or barriers.

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Utilizing the same equipment list and reference sound levels provided in the ISE report, the construction noise levels were calculated over an 8-hour average per the request of the County. The results of the construction noise levels are presented below in Table 1. As can be seen in Table 1, at a distance of 1,230 feet from the nearest off reservation property line the point source noise attenuation from these construction activities is -27.9 dBA. This would result in an anticipated worst case eight-hour average combined noise level of 44.3 to 49.4 dBA Leq_{8h} which is much less than 75 dBA at the property line over an eight hour period. Given this, the noise levels will comply with the County of San Diego's 75 dBA 8-hour standard at all Project property lines.

Table 1: Construction Noise Levels

Construction Phase	Construction Equipment*	Quantity	Source Level @ 50 Feet (dBA)*	Duty Cycle (Hours/Day)	Cumulative Noise Level @ 50 Feet (dBA Leq_{8H})
Grading, Clearing and Hauling	Dozer D8 Cat	1	75	8	75.0
	Loader	1	70	8	70.0
	Water	1	65	4	62.0
	Truck	2	70	4	70.0
				Cumulative Levels @ 50 Feet (dBA)	77.3
				PROPERTY LINE NOISE LEVEL @ 1,230 Feet	**49.4**
Underground Utilities	Track Backhoe	1	70	6	68.8
	Loader	1	70	6	68.8
	Concrete Truck	2	70	0.5	61.0
	Dump/Haul Trucks	2	70	4	70.0
				Cumulative Levels @ 50 Feet (dBA)	74.2
				NEAREST PROPERTY LINE NOISE LEVEL	**46.4**
Surface Paving	Skid Steer Cat	1	70	6	68.8
	Dump/Haul Trucks	4	70	0.5	64.0
	Paver	1	65	8	65.0
	Roller	1	65	8	65.0
				Cumulative Levels @ 50 Feet (dBA)	72.1
				NEAREST PROPERTY LINE NOISE LEVEL	**44.3**

* Equipment list and noise levels taken from the ISE Noise Report, 12/11.

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Biological Noise

In 1991, the U.S. Fish and Wildlife Service (USFWS) recommended that hourly noise levels not exceed 60 dBA Leq or ambient conditions, whichever is greater, to protect the California Gnatcatcher and other bird species. The County of San Diego has adopted this standard for all sensitive species. Therefore, the 60 dBA Leq or ambient was used as the noise criteria to assess noise impacts on sensitive wildlife both onsite and offsite. Construction activities may occur during a sensitive habitat nesting/breeding season. Based on the worst-case noise levels identified in Table 1 above of 77.3 dBA at 50 feet, the nearest off reservation sensitive habitat area is located 2,200 feet from the proposed construction activities. At a distance of 2,200 feet the worst-case construction noise level would be 44-45 dBA Leq. Thus, the construction noise levels would be below the 60 dBA Leq threshold. This is a worst-case scenario that does not take into account topography or the separation of the anticipated equipment.

Off-Site Roadway Noise Analysis and Findings

The offsite project related roadway segment noise levels projected in this report were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level. A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections. The noise contours are then established by iterating the equivalent noise level over many distances until the distance to the desired noise contour(s) are found. For this project the 60 dBA CNEL contour was calculated based upon the County of San Diego thresholds.

Hard site conditions, as identified in the previous report, were used to develop the noise contours and analyze noise impacts along all roadway segments. The future traffic noise model utilizes a typical, conservative vehicle mix of 95% Autos, 3% Medium Trucks and

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
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Fax 760-689-4943

2% Heavy Trucks for all analyzed roadway segments. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

Direct and cumulative roadway noise impacts would be considered significant if the project increases noise levels for a noise sensitive land use by 3 dBA CNEL and if: (1) the existing noise levels already exceed the 60 dBA CNEL residential standard, or (2) the project increases noise levels from below the 60 dBA CNEL standard to above 60 dBA CNEL in the area adjacent to the roadway segment.

If cumulative impacts are found, the County of San Diego requires that the Cumulative without Project scenario and the cumulative with project scenario be compared to the existing noise levels to determine if the project has a cumulatively considerable significant impact. Project generated cumulatively considerable roadway noise impacts would be significant if the project raises the Cumulative without Project noise level by 1 dBA or greater. If the project and cumulative projects do not increase the existing noise levels to sensitive land uses by 3 dBA CNEL, no significant cumulative noise impacts occur and the project would not result in a cumulatively considerable impact.

Direct Off-Site Noise Impacts

To determine if direct offsite noise level increases associated with the development of the project will create noise impacts. The noise levels for the existing conditions were compared with the noise level increase from the project. Utilizing the project's traffic assessment (Source: Linscott, Law and Greenspan, 2/12) noise contours were developed for the following weekday and weekend traffic scenarios:

Existing: Current day noise conditions without construction of the project.
Existing Plus Project: Current day noise conditions plus the completion of the project.

Existing vs. Existing Plus Project: Comparison of the direct project related noise level increases in the vicinity of the project site.

Mr. Ralph Kingery
BRG Consulting, Inc.
304 Ivy Street
San Diego, CA 92101

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
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Fax 760-689-4943

The noise levels and the distances to the 60 dBA CNEL contours for the roadways in the vicinity of the Project site are given in Table 2 for the Existing Scenario and in Table 3 for the Existing Plus Project Scenario. Note that the values given do not take into account the effect of any noise barriers or topography that may affect ambient noise levels. Table 4 presents the comparison of the Existing Year with and without project related noise levels.

The overall roadway segment noise levels will increase from 0.1 dBA CNEL to 0.2 dBA CNEL with the development of the project. The project does not create a direct noise increase of more than 3 dBA CNEL on any roadway segment. Therefore, the project's direct contributions to offsite roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses.

Table 2: Existing Noise Levels

Roadway	Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Weekday					
Willow Road	West of Viejas Casino	7,730	45	68.3	337
	East of Viejas Casino	2,440	45	63.3	106
Weekend					
Willow Road	West of Viejas Casino	11,810	45	70.1	515
	East of Viejas Casino	2,730	45	63.8	119
[1] Source: Project Traffic study prepared by Linscott, Law and Greenspan, 2/12					

Table 3: Existing + Project Noise Levels

Roadway	Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Weekday					
Willow Road	West of Viejas Casino	8,090	45	68.5	353
	East of Viejas Casino	2,530	45	63.4	110
Weekend					
Willow Road	West of Viejas Casino	12,170	45	70.3	530
	East of Viejas Casino	2,820	45	63.9	123
[1] Source: Project Traffic study prepared by Linscott, Law and Greenspan, 2/12					

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Table 4: Existing vs. Existing + Project Noise Levels

Roadway	Segment	Existing Noise Level @ 50-Feet (dBA CNEL)	Existing Plus Project Noise Level @ 50-Feet (dBA CNEL)	Project Related Direct Noise Level Increase (dBA CNEL)
Weekday				
Willow Road	West of Viejas Casino	68.3	68.5	**0.2**
	East of Viejas Casino	63.3	63.4	**0.1**
Weekday				
Willow Road	West of Viejas Casino	70.1	70.3	**0.2**
	East of Viejas Casino	63.8	63.9	**0.1**
Sound Levels provided are worst-case and do not take into account topography or shielding from barriers.				

Cumulative Off-Site Noise Impacts

To determine if cumulative offsite noise level increases associated with the development of the project and other planned or permitted projects in the vicinity will create noise impacts. The noise levels for the near-term project buildout and other planned and permitted projects were compared with the existing conditions. Utilizing the project's traffic assessment (Source: Linscott, Law and Greenspan, 2/12) noise contours were developed for the following weekday and weekend traffic scenarios:

Existing: Current day noise conditions without construction of the project.

Existing Plus Cumulative Projects Plus Project: Current day noise conditions plus the completion of the project and the completion of other permitted or planned projects.

Existing vs. Existing Plus Cumulative Plus Project: Comparison of the existing noise levels and the related noise level increases from the combination of the project and all other planned or permitted projects in the vicinity of the site.

Mr. Ralph Kingery
BRG Consulting, Inc.
304 Ivy Street
San Diego, CA 92101

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446 Crestcourt Lane, Fallbrook CA 92028
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The existing noise levels and the distances to the 60 dBA CNEL contours for the roadways in the vicinity of the Project site are given in Table 2 above for the Existing Scenario. The near-term cumulative noise conditions are provided in Table 5. No noise barriers or topography that may affect noise levels were incorporated in the calculations. Table 6 presents the comparison of the Existing Year and the Near-Term Cumulative noise levels.

The overall roadway segment noise levels will increase from 0.1 dBA CNEL to 0.3 dBA CNEL with the development of the project. No cumulative noise level increases of 3 dBA CNEL were found on any of the roadway segments. Therefore, no cumulative or cumulatively considerable impacts are anticipated and no future analysis is required.

Table 5: Existing + Project + Cumulative Noise Levels

Roadway	Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Weekday					
Willow Road	West of Viejas Casino	8,190	45	68.5	357
	East of Viejas Casino	2,530	45	63.4	110
Weekend					
Willow Road	West of Viejas Casino	12,270	45	70.3	535
	East of Viejas Casino	2,820	45	63.9	123
[1] Source: Project Traffic study prepared by Linscott, Law and Greenspan, 2/12					

Table 6: Existing vs. Existing + Project + Cumulative Noise Levels

Roadway	Segment	Existing Noise Level @ 50-Feet (dBA CNEL)	Cumulative Plus Project Noise Level @ 50-Feet (dBA CNEL)	Cumulative Noise Level Increase (dBA CNEL)
Weekday				
Willow Road	West of Viejas Casino	68.3	68.6	**0.3**
	East of Viejas Casino	63.3	63.4	**0.1**
Weekday				
Willow Road	West of Viejas Casino	70.1	70.3	**0.2**
	East of Viejas Casino	63.8	63.9	**0.1**
Sound Levels provided are worst-case and do not take into account topography or shielding from barriers.				

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On-Site Circulation Noise Increase

The Project site already has onsite vehicle activities and parking from the casino patrons. The addition of the hotel could increase the onsite traffic 450 daily trips or 32 peak hour trips according to the Project's Traffic assessment (Linscott, Law and Greenspan, 2/12). Vehicles accessing the valet parking area north of the hotel entrance would are estimated to be traveling between 15 and 20 mph, and thus result in vehicular sound levels of 50.1 dBA CNEL at 50 feet. This minimal increase in traffic volume would not raise the existing noise levels significantly and therefore would not be considered an impact.

Conclusions

Construction Operations

At a distance of 1,230 feet from the nearest off reservation property line the point source noise attenuation from these construction activities results in an anticipated noise levels of 44-50 dBA Leq_{8h}. This would result in an anticipated worst case eight-hour average combined noise level of much less than 75 dBA at the property line. Given this, the noise levels will comply with the County of San Diego's 75 dBA 8-hour standard at all Project property lines.

Based on the worst-case construction noise levels, the nearest off reservation sensitive habitat area is located 2,200 feet from the proposed construction activities. At a distance of 2,200 feet the worst-case construction noise level would be 44-45 dBA Leq. Thus, the construction noise levels would be below the 60 dBA Leq threshold.

Off-Site Roadway Noise Increases

The project does not create a direct noise increase of more than 3 dBA CNEL on any roadway segment and no cumulative noise increases of 3 dBA CNEL or more were found. Therefore, the project's direct and cumulative contributions to offsite roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses.

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On-Site Circulation Noise Increase

The Project is not anticipated to result in a significant operational noise increase due to the minimal onsite traffic volume increase. Thus, no traffic related operational impacts would occur and no mitigation measures are required.

If you have any questions, please contact me directly at (760) 473-1253.

Sincerely,
Ldn Consulting, Inc.

Jeremy Louden
Principal